Raspberry pi x Raspbian trick

Warning !!! : 1.The writer of this trick aren't the expert. So, don't believe this trick too much. There're not only one part to reach the success.

2.(for ver 1.0) you should have some basic control on raspberrypi if you want to understand this trick.

Recommend website :

https://www.raspberrypi.org/

➔ There're many tricks you can get from here and the "FORUM"

https://www.raspberrypi.org/downloads/raspbian/

➔ You can download Raspbian from here. I recommend "Raspbian stretch with desktop" if you want to make opencv.Or you can use "Raspbian stretch with desktop with recommend software" if you prefer wolfram alpha,scratch,etc.

https://www.pyimagesearch.com/2018/09/26/install-opencv-4-on-your-raspberry-pi/

➔ If you want to try to install OpenCV by yourself. I recommend **Adrian Rosebrock**'s article from pyimagesearch

https://www.pyimagesearch.com/2016/05/16/running-a-python-opencv-script-on-reboot/

➔ To make auto run your script with opencv

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By | Wipop Panyatipsakul   2B-KMUTT # 16 @ FIBO

Recommend software :

➔ Win32 diskimager -> you can write your .img file on your SD card with `write` and you can use `read` to copy your .img in your card in case that if your card had a serious error. It can save your time.

➔ VNC-Viewer   -> software that allow you to control your   raspberry pi remotely via IP address on wifi. Don't forget to config "enable" in VNC interface option in   `~ $ sudo raspi-config`

➔ PuTTY -> you can open raspberry pi terminal remotely by PuTTY.It can help you to solve some problem in raspberry pi.

➔ WinSCP -> It allow you to transfer any file from your computer to your raspberry pi remotely & easily.

➔ Fing application -> It's important application you should use to scan and know IP address of raspberry pi. If you don't know the IP, You can't communicate to raspberry pi with any remote software. You should make your raspberry pi and your device(that you use to control raspberry pi via WinSCP,VNC,PuTTY) are in the same wifi network.

The instruction usage in terminal :

`~ $ ls`   ->   to look all file & folder in any folder you're in.

`~ $ cd filename`   -> use to come in folder that named " filename ".

`~ $ cd`   -> use to come out from any folder .

`~ $ cat filename`   -> to look the script in "filename" (look only).

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`~ $ mkdir foldername`   -> to create a folder named "foldername"

`~ $ sudo nano anyfile`   ->

`~ $ sudo python script.py` -> to compile your python script with python ver. 2.x.x

`~ $ sudo python3 script.py` -> to compile your python script with python ver. 3.x.x

`~ $ sudo reboot`   -> to reboot raspberrypi

`~ $ sudo shutdown –h now` -> to shutdown raspberrypi

`~ $ sudo modprobe bcm2835-v4l2` -> to debug any problem occurred when you use image processing with camera.

To set auto run script on raspberrypi when pi is reboot or restart :

Go to   `~ $ sudo nano /etc/profile`

And put your instruction you want on the bottom of the file(ex. sudo python3 script.py). If you want to cancel your instruction, I recommend you to access raspbrrypi with "PuTTY" and go to sudo nano /etc/profile again and put " # " in front of your instruction or delete your instruction

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To set auto run script on raspberrypi when pi is reboot or restart (if you use OpenCV):

(warning: I've found this way unexpectedly. So, I don't garaunteed about the correction and any error that might be occurred)

1. Create folder pi-reboot at /home/pi. Then create file on_reboot.sh at /home/pi/pi-reboot

2. Paste this script in on_reboot.sh . Save and exit by ctrl + X -> y -> enter

    ```
    #!/bin/bash


    source /home/pi/.profile

    workon cv

    cd /home/pi/any folder that scripts are

    python3 script you want.py
    ```

3. Key ~ $ chmod +x on_reboot.sh

4. Updating crontab by ~ $ sudo crontab -e Then add this script to the bottom of file

    ```
    @reboot /home/pi/pi-reboot/on_reboot.sh
    ```

5. Then go to ~ $ sudo nano /etc/profile , add this script to the bottom Save and exit

    ```
    source ~/.profile
    workon cv


    sudo python3 script you want.py
    ```

6. Reboot your raspberrypi. And Now when your raspberrypi is open.It will run your script automatically.

To make OpenCV can run with python3

At first,I can run OpenCV completely with python2 . But I have to run it with python3 because of dlib. So, I tried several ways till I found this unexpectedly.I install these library and complete to run OpenCV with python3.

```
~ $ sudo apt-get install libopencv-dev python-opencv
```

```
~ $ sudo pip3 install opencv-python
```

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